AMENDMENTS TO THE SPECIFICATION

Please delete the first full paragraph on page 1 in the specification, and replace with the following new one:

Technical Field

The present invention relates to an organometallic compound that can be a precursor~~material~~ for preparing iridium-based~~iridium-containing~~ films on substrates, a process for producing the compound, and a process for preparing iridium-based~~iridium-containing~~ films.

Please delete the second full paragraph on page 2 bridging page 3 in the specification, and replace with the following new one:

For example, as cyclopentadienyl derivatives, (1,5-cyclooctadiene)(ethyl-cyclopentadienyl)iridium is disclosed (for example, JP-A-11-292888). Since this metallic compound is liquid at ordinary temperatures, and its melting point is low as compared with that of (cyclopentadienyl)(1,5-cyclooctadiene)iridium, it is considered that this compound is possessed of characteristics necessary as the precursor applied to the CVD process. However, this compound has extremely high stability, and the decomposition temperature of the complex is high. Accordingly, it is inevitably required to increase the substrate temperature at the time of film formation. As a result, there is encountered such a problem that the step coverage at the time of film-formation is poor. There is further encountered such a problem that an iridium oxide film is difficult to be formed. In the meanwhile, as a report of iridium complexes having ethylene and cyclopentadienyl group as regands, there is a synthesis example of (cyclopentadienyl)bis(ethylene)iridium (for example, see M. Dziallas, A. Hohn and H. Werner, *J. Organomet. Chem.*, **330** (1987) 207-219). However, the compound is solid at room temperature and is not suitable as a CVD precursor~~CVD materials~~.

Please delete the first full paragraph on page 3 in the specification, and replace with the following new one:

Disclosure of the Invention

The present invention has been made in view of the above technical problems. That is, the present invention relates to an organometallic compound that can be a precursor for preparing iridium-based~~iridium-containing~~ films, and the objects are to provide the organometallic compound having a low melting point, excellent vaporization characteristics and low film formation temperature on a substrate, a process for producing the same, and a process for preparing iridium-based~~iridium-containing~~ films using the organometallic compound.

Please delete the first full paragraph on page 5 in the specification, and replace with the following new one:

The present invention further provides a process for preparing iridium-based~~iridium-containing~~ films, which comprises using, as a precursor, the organometallic iridium compound represented by the general formula (1).

Please delete the third full paragraph on page 7 bridging page 8 in the specification, and replace with the following new one:

An iridium-based~~iridium-containing~~ film can be produced using, as the precursor, the organometallic iridium compound represented by the general formula (1) of the present invention. Specific means for such a production process is not particularly limited. For example, any of CVD process, atomic layer deposition process (ALD process), and spin coating process may be used.

Please delete the first full paragraph on page 8 in the specification, and replace with the following new one:

In the case of producing the iridium-based~~iridium-containing~~ film by CVD process, ALD process or the like using the organometallic iridium compound represented by the general formula (1) of the present invention, a method of supplying the precursor to a film-formation chamber is not particularly limited. For example, a bubbling process may be used, and a liquid injection process may also be used.

Please delete the second full paragraph on page 8 in the specification, and replace with the following new one:

In the present invention, in the case of producing the iridium-based~~iridium-containing~~ film by CVD process or ALD process, the organometallic iridium compound may be used as it is, or may be dissolved in an organic solvent and then used as an organometallic iridium compound solution.

Please delete the third full paragraph on page 12 in the specification, and replace with the following new one:

Industrial Applicability

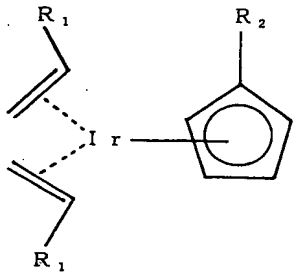
The organometallic iridium compounds of the present invention are liquid under gas bubbling conditions in the case of using CVD process as a process for preparing iridium-based~~iridium-containing~~ films, so that those can quantitatively be supplied. Furthermore, the organometallic iridium compounds can be thermally decomposed at a temperature lower than that in the conventional materials. As a result, an iridium-based~~iridium-containing~~ film having excellent step coverage can be formed on a substrate. The present invention makes it possible to prepare iridium-based~~iridium-containing~~ films having excellent mass-productivity.

Please delete the present Abstract of the Disclosure.

Please add the following new Abstract of the Disclosure:

An organometallic iridium compound having low melting point, excellent vaporization characteristic and low film formation temperature on a substrate, a process for producing the compound, and a process for preparing iridium-based films using the organometallic compound are provided.

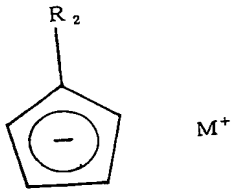
The organometallic iridium compound represented by the formula (1)



(1)

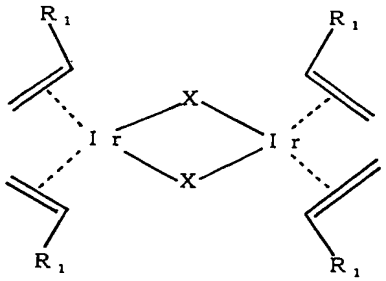
(example of specific compound: (ethylcyclopentadienyl)bis(ethylene)iridium)

is obtained by reacting a compound represented by the formula (4)

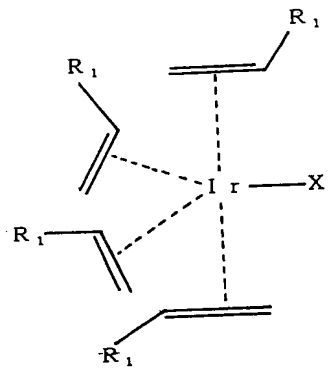


(4)

with a compound represented by the formula (2) or (3)



(2)



(3)

An iridium-based film is prepared using the compound as a precursor.

In the formulae, R_1 represents hydrogen atom or a lower alkyl group; R_2 represents a lower alkyl group; X represents a halogen atom; and M represents an alkali metal.